BCM50 Rls 6.0

Router – LAN Settings

Task Based Guide

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LAN Settings

Overview

This document is designed to guide you through the setup of the BCM50 Integrated Router LAN Settings. The LAN settings define the BCM50 Integrated Router Card LAN IP Address, DHCP mode, and additional features such as IP Alias and Multicast.

Note: This guide relates to the BCM50a/ba and BCM50e/be models only.

Note: Although the BCM50a/ba models will not be supplied with BCM 6.0, it is possible to upgrade the variants of these models to BCM 6.0, if they were originally supplied with BCM50 R2 or BCM50 R3 software.

Note: The BCM50 Integrated Router is almost identical to the Business Secure Router (BSR) models. BCM50a/ba routers are based on the BSR252 and BCM50e/be routers are based on the BSR222.

LAN IP Address

It will be necessary to define the IP address of the BCM50 Integrated Router card. The Router Card LAN IP address will generally be the default gateway for network devices (e.g. PCs, IP Phones) connected to the BCM50 Integrated LAN interfaces.

DHCP

The BCM50 Integrated Router can provide DHCP (Dynamic Host Configuration Protocol) service to network clients. DHCP allows a network administrator to supervise and distribute IP addresses – and other network settings such as default gateways and DNS servers - from a central location. This service dynamically assigns IP addresses to network computers and IP telephones, so you do not need to manually assign an IP address. It can also automatically assign a new IP address if a device connects to a different place in the network.

There should be only one DHCP Server on a network. It is recommended that if enabling DHCP, the BCM50 Router be the only DHCP Server on the network on which it is to be installed.

Note: The DHCP range to be issued to DHCP clients should be on the same network range as the Router Card LAN IP Address. For example, if the Router Card LAN IP Address is 192.168.110.1, the DHCP start address should be somewhere in the 192.168.110.x range (following subnet rules).

Note: It is possible to configure the DHCP service on the main module **instead** of via the router itself. DHCP must be disabled on the router to be able configure DHCP on the main module. Refer to the ***DHCP Guide*** for more information.

DHCP & BCM50 VLANs

The BCM main unit supports VLAN configuration, useful for segregating IP phone network traffic from regular data traffic for example. Each configured VLAN can have its own DHCP range assigned.

If VLAN configuration is required for the network using the BCM, then the BCM should be configured for this and the BCM should be used as the DHCP server, as the router card does not support VLAN configuration. Refer to the ***VLANs*** and ***DHCP Guides*** for information on how to perform this configuration.

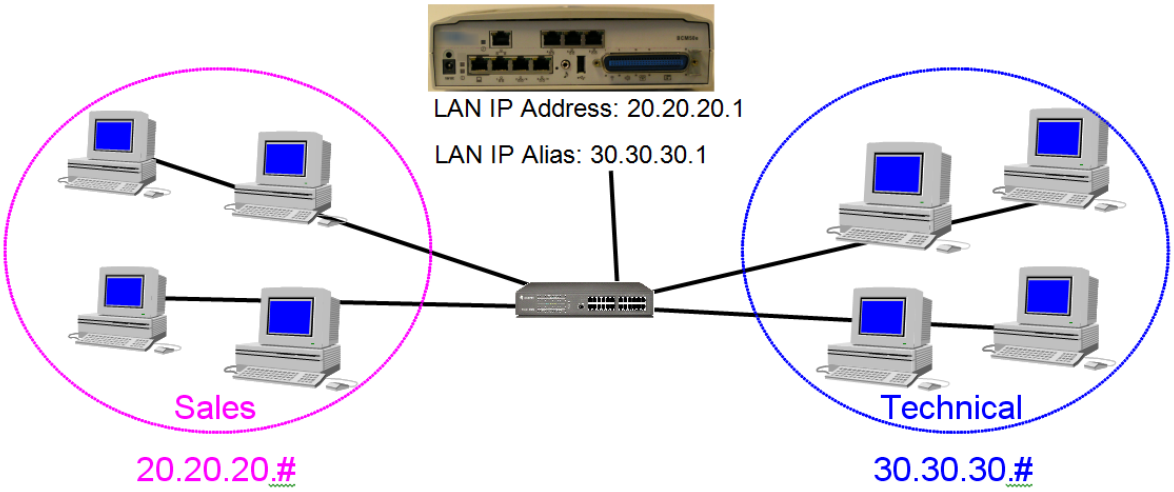
Static DHCP

If certain PCs/devices on the network (e.g. a FTP Server) require a specific IP address, this can be defined in the Static DHCP section.

IP Alias

IP Alias allows you to partition a physical network into different logical networks over the same Ethernet interface. The BCM50 Integrated Router supports three logical LAN interfaces via its single physical Ethernet interface with the BCM50 Integrated Router itself as the gateway for each LAN network.

IP Alias can be used to create separate networks that are physically connected to the same LAN interface. For example, two departments can be logically separated but connected by the same physical infrastructure. The diagram below describes a possible usage of IP Alias.



For the Sales network the default gateway will be 20.20.20.1 and for the Technical network the default gateway will be 30.30.30.1

Default Settings

The default LAN settings for the BCM50 Integrated Router are as follows:

- LAN IP Address: 192.168.1.1
- Subnet Mask: 255.255.255.0
- DHCP Server: Enabled
  - Start Pool IP Address:192.168.1.2
  - Pool size: 126

BCM50 Integrated Router and the BCM50 Customer LAN IP Address

A distinction should be made between the LAN Router Card IP Address and the BCM50 Customer LAN IP Address, notably:

- The BCM50 Customer LAN IP Address is the address that Element Manager will connect to, and will also be the S1 Terminal address that IP Phones connect to.
- The Router Card LAN IP Address is the address entered in Internet Explorer for configuration via the Web Router GUI, and will be the default gateway for devices on the network **including the BCM50 Integrated Router itself**.

For information concerning the configuration of the BCM50 LAN Customer LAN IP address, refer to the ***BCM50 System Start Up Guide***.

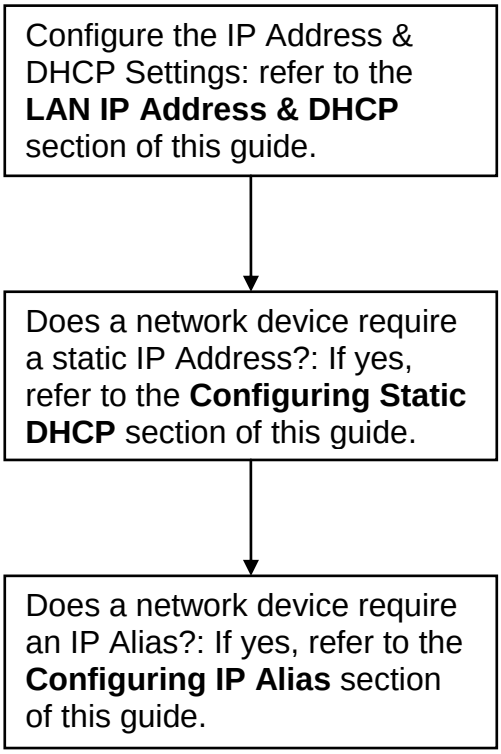
Required Information

Before configuring the LAN settings, you may want to obtain the following information:

- The required IP Address & Subnet Mask of the BCM50 Integrated router
- DHCP mode, i.e. will the BCM50e/be/a/ba be a DHCP Server or not?
- Is there any requirement for IP Alias?

Flow Chart

The flow chart below shows which sections of the guide you should use.



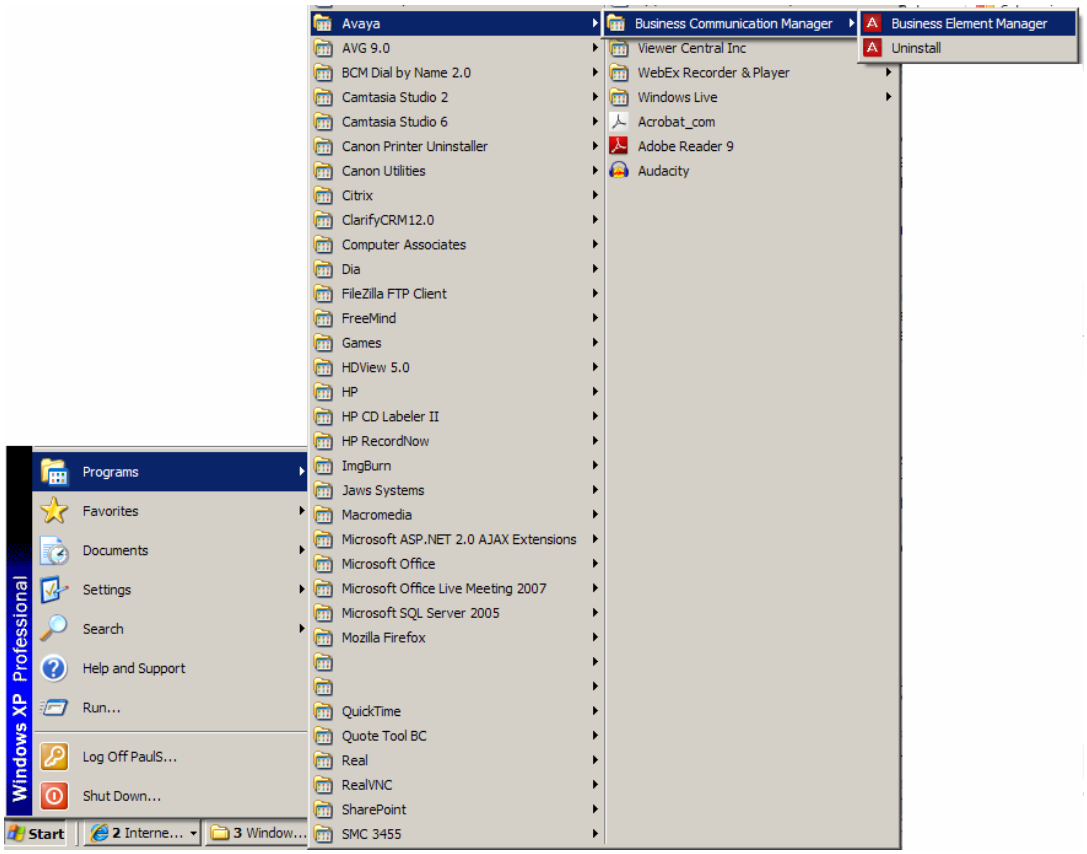
Accessing the Web Router GUI

There are two methods of accessing the Web Router GUI, independent on which model you are configuring:

- Via Element Manager (management application for all BCM50 models)
- Directly from a web browser

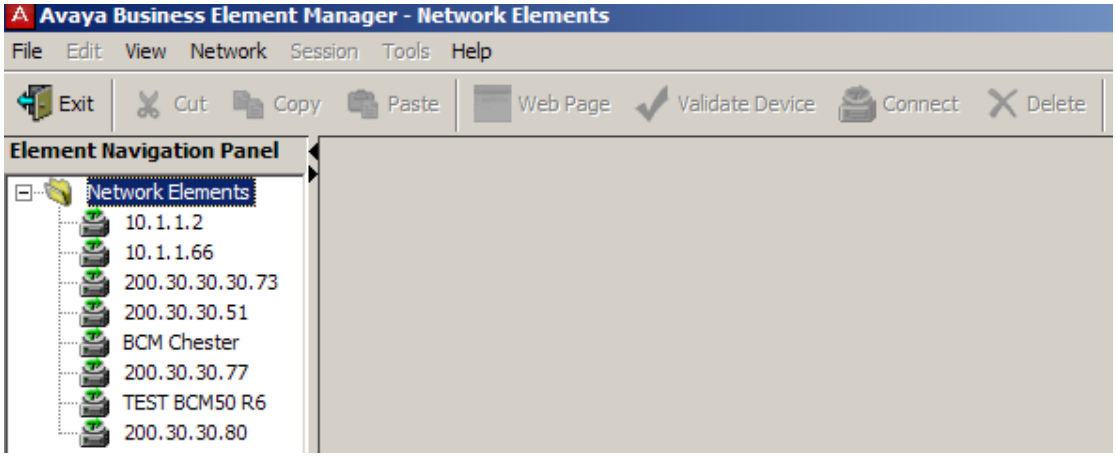
From Element Manager

1. To access the Business Element Manager application from the Start Menu, navigate to **Start**, **Programs**, **Avaya**, **Business Communications Manager**, **Business Element Manager**.

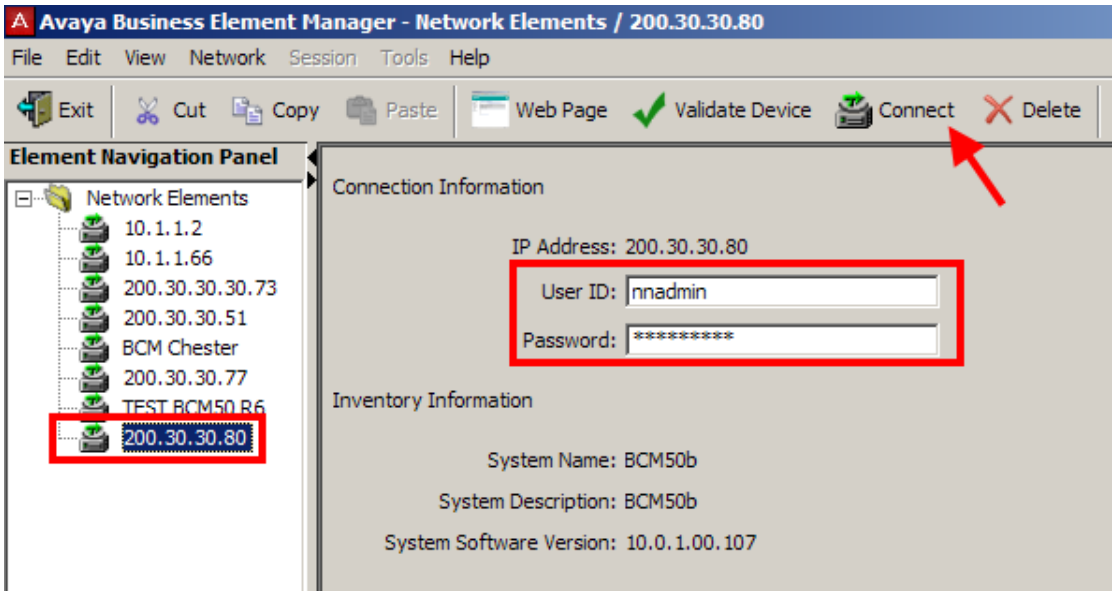


2. Alternatively, double-click on the **Business Element Manager** desktop icon.

3. You will be presented with the **Element Manager** interface.

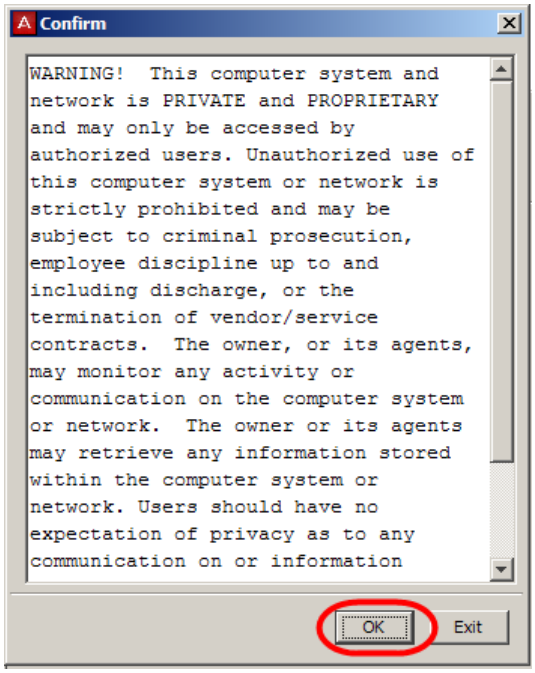


4. Open the **Network Elements** folder and select the IP Address of the BCM.

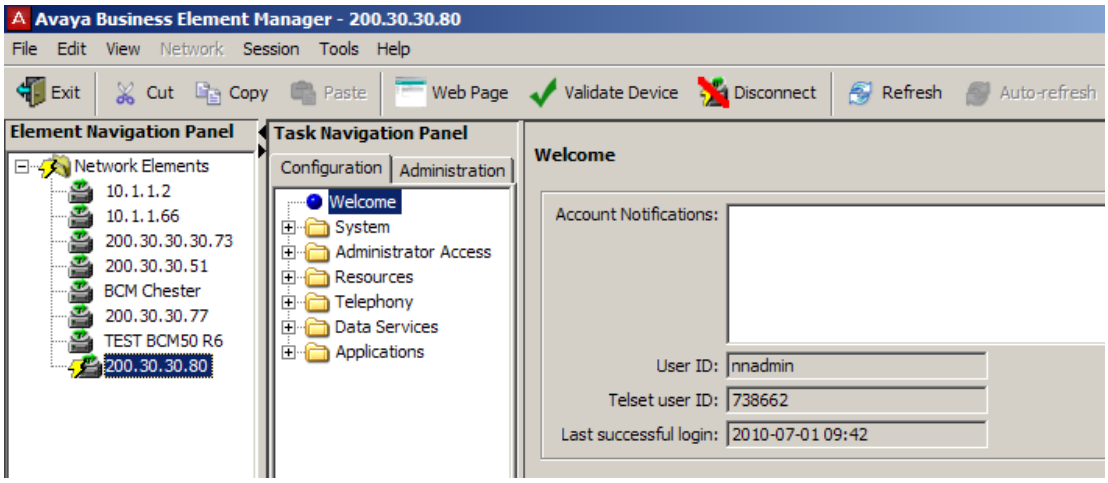


5. Enter the User Name of the BCM in the User Name field, by default this is **nnadmin**. Then enter the Password in the Password field, by default the password is **PlsChgMe!**. Click the **Connect** button.

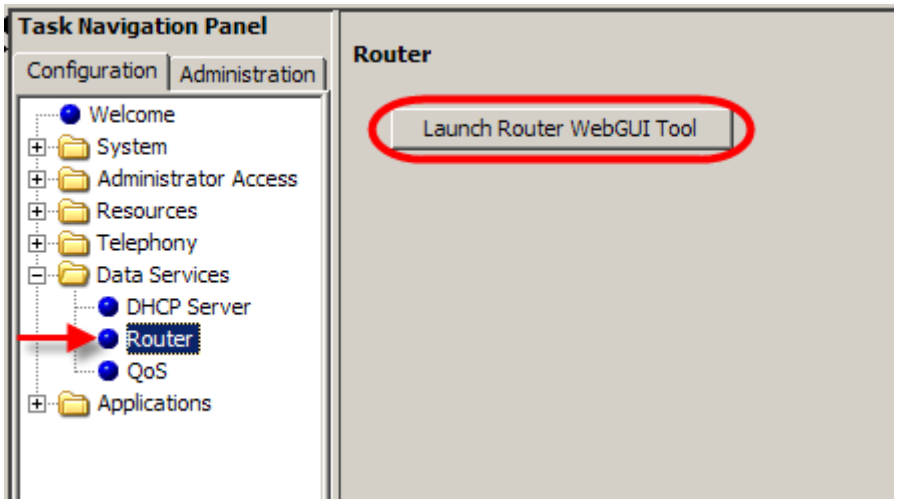
6. A warning screen will appear, read the warning and click **OK**.



7. You will be presented with the Element Manager interface.

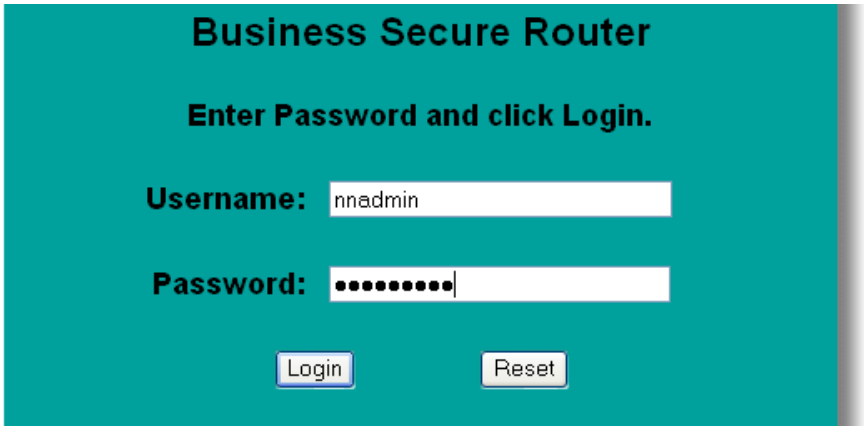


8. Click the **Data Services** link, select the **Router** link and click the **Launch Router Web GUI Tool** button.

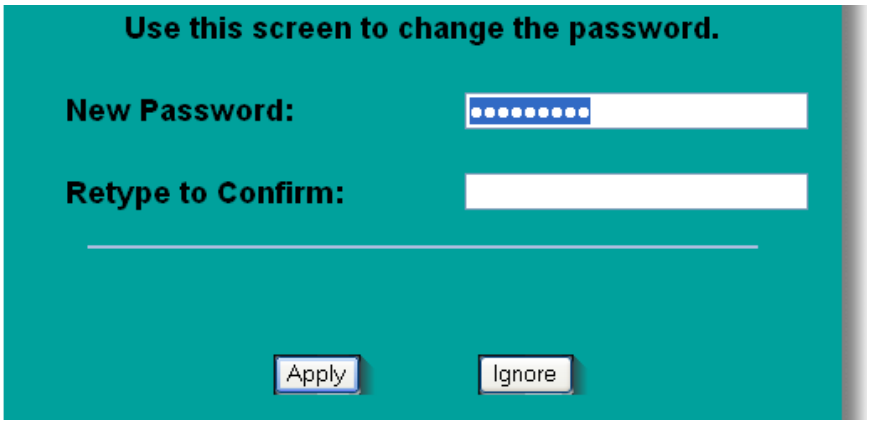


9. The Business Secure Router logon screen will be displayed. Enter the Username (default = **nnadmin**) and Password (default = **PlsChgMe!**) and click **Login**.

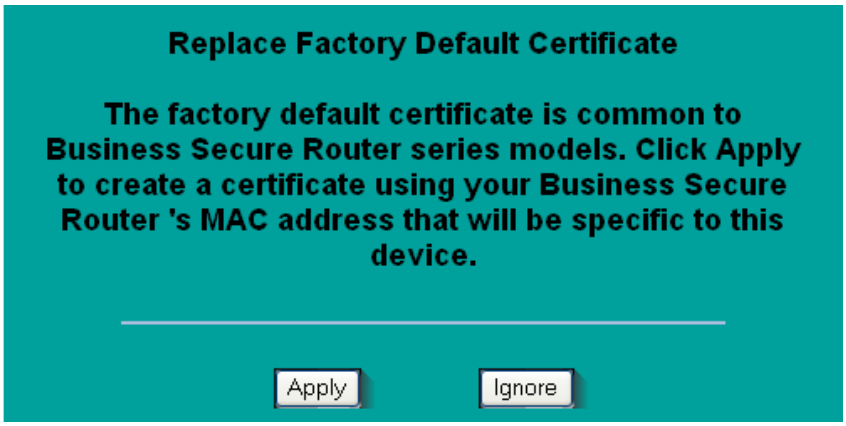
Note: if the above logon details do not work, try Username = **admin**, and Password = **setup.**



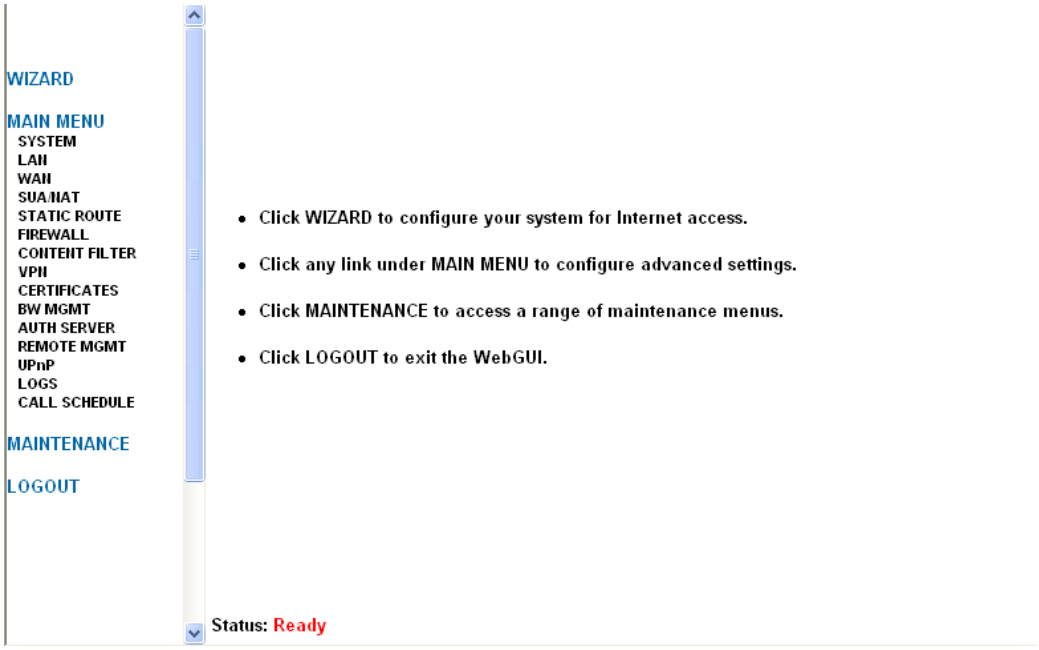
10. Change the password and click **Apply**, or click **Ignore** to continue.



11. To replace factory certificate click **Apply** or **Ignore** to continue.

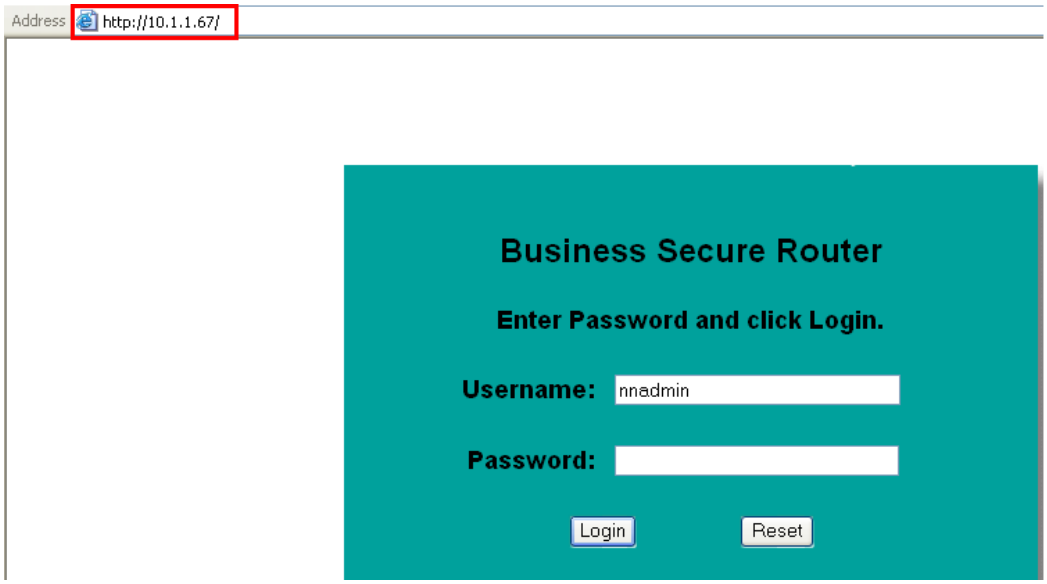


12. The Main Menu screen will display.



Access Directly via a Web Browser

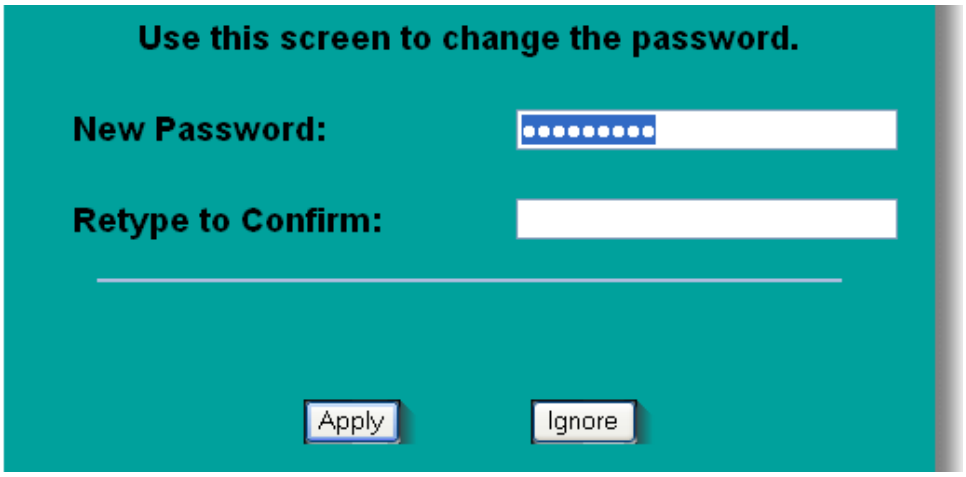
1. Open your web browser. In the address bar, type in **http://<router card LAN IP Address>/** and press **Enter**.



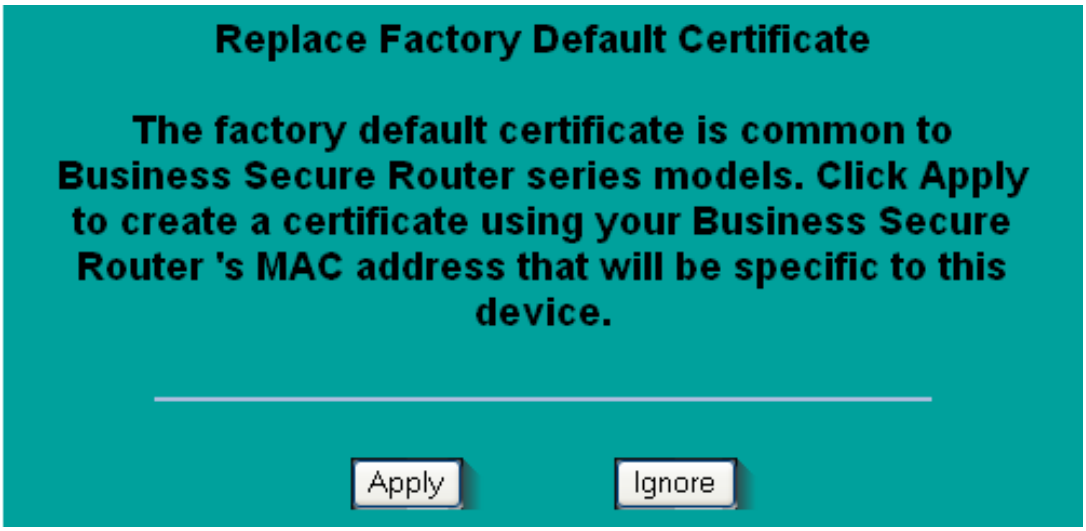
2. The Business Secure Router logon screen will be displayed. Enter the Username (default = **nnadmin**) Password (default = **PlsChgMe!**) and click **Login**.

Note: if the above logon details do not work, try Username = **admin** Password = **setup.**

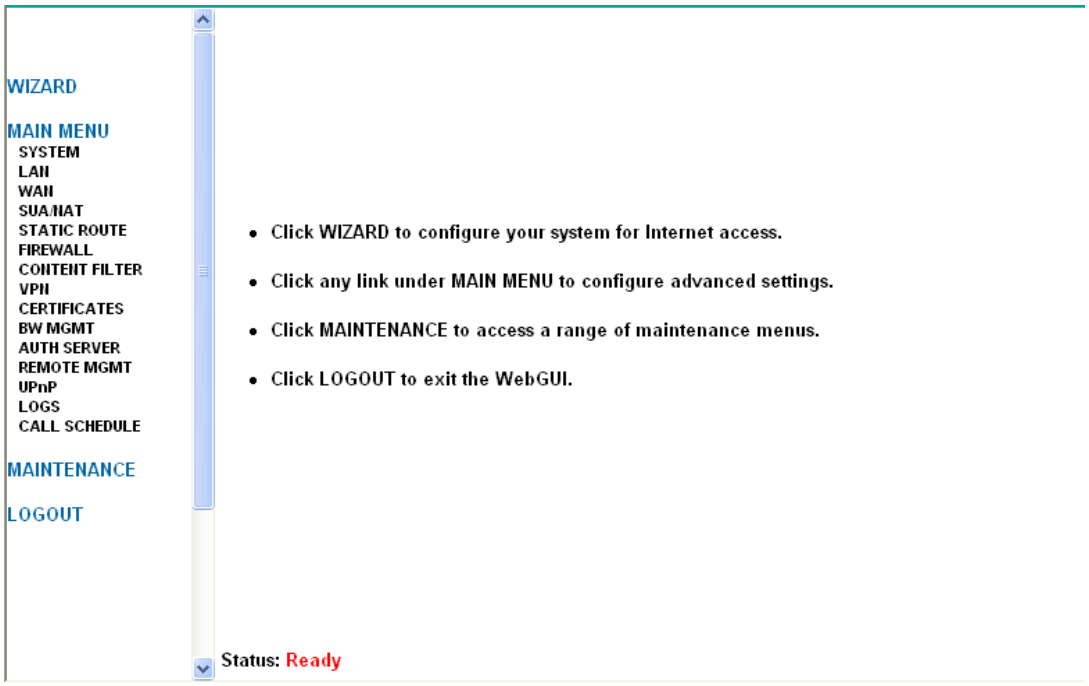
3. Change the password and click **Apply**, or click **Ignore** to continue.



4. To replace factory certificate click **Apply** or **Ignore** to continue.



5. The Main Menu screen will display.



LAN IP Address & DHCP

This section describes how to configure the BCM50 Integrated Router Card LAN IP Address, Subnet Mask, and Multicast settings.

Also, use this section to configure the DHCP mode, start IP Address, and Pool size. Ensure you allow enough IP Addresses in the Pool (size) to accommodate all the DHCP clients on your network.

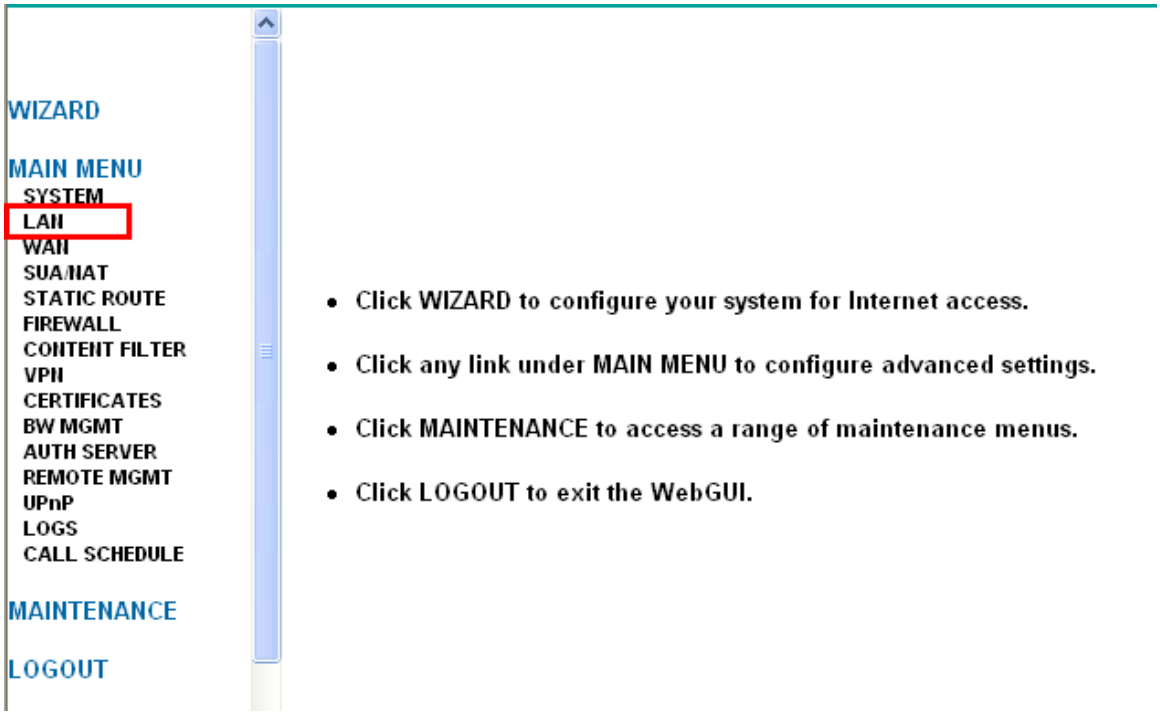
DNS servers can be entered (if known). The DNS information entered here will be issued to DHCP clients to resolve domain name requests (e.g. whilst using Internet Explorer to access websites by name).

Note: The DHCP range to be issued to DHCP clients should be on the same network range as the Router Card LAN IP Address. For example, if the Router Card LAN IP Address is 192.168.110.1, the DHCP start address should be somewhere in the 192.168.110.x range (following subnet rules).

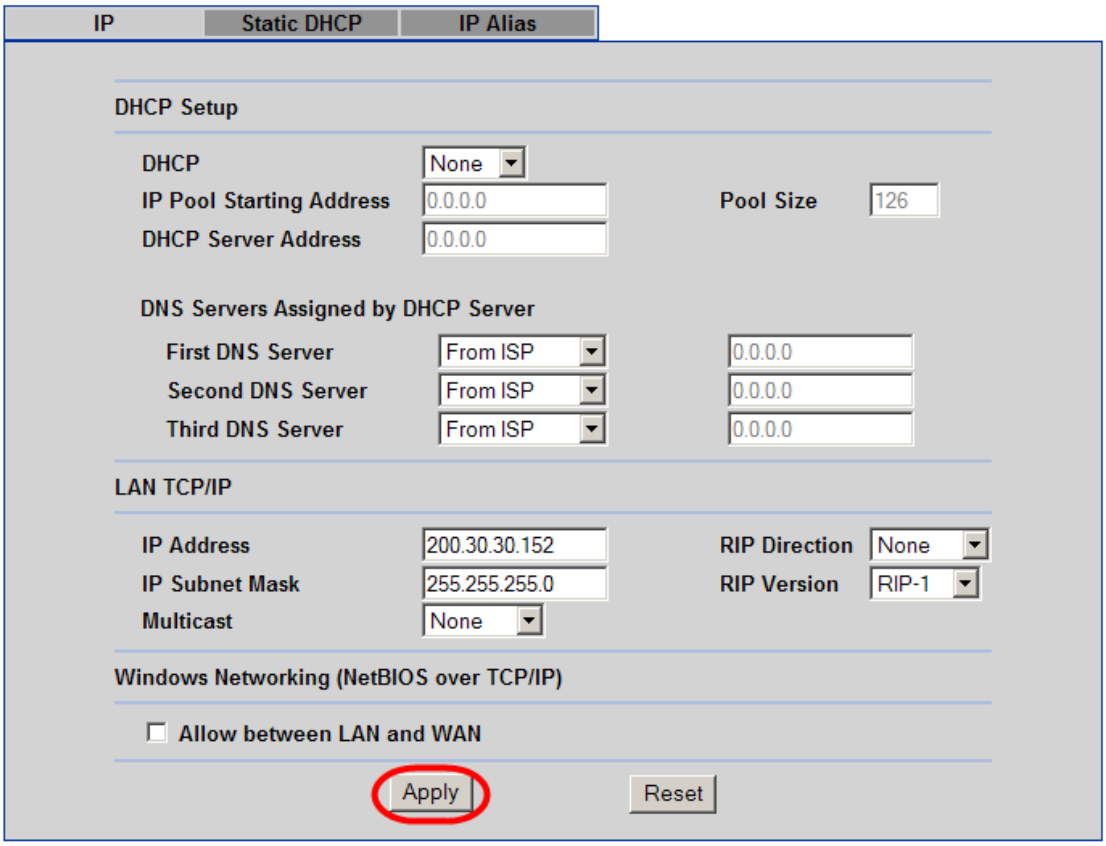
Note: It is possible to configure the DHCP service on the main module **instead** of via the router itself. DHCP must be disabled on the router to be able to configure DHCP on the main module. Refer to the ***DHCP Guide*** for more information.

1. Access the Web Router GUI (refer to the **Accessing the Web Router GUI** section of this guide).

2. From the **Main** menu select **LAN**.



3. In the **IP** tab, enter the DHCP, IP Address, Subnet Mask, and Multicast options as required.



4. You can choose to allow Windows Networking packets (NetBIOS) between the LAN and the WAN.

5. Click the **Apply** button to save your settings.

LAN IP Settings

Field	Description
DHCP Setup	
DHCP	DHCP (Dynamic Host Configuration Protocol, RFC 2131 and RFC 2132) allows individual clients (workstations) to obtain TCP/IP configuration at startup from a server. Unless you are instructed by your ISP, leave this field set to **Server**. When configured as a server, the Business Secure Router provides TCP/IP configuration for the clients. When set as a server, fill in the **IP Pool Starting Address** and **Pool Size** fields. Select **Relay** to have the Business Secure Router forward DHCP requests to another DHCP server. When set to Relay, fill in the **DHCP Server Address** field. Select **None** to stop the Business Secure Router from acting as a DHCP server. When you select **None**, you must have another DHCP server on your LAN, or else the computers must be manually configured.
IP Pool Starting Address	This field specifies the first of the contiguous addresses in the IP address pool. The default is 192.168.1.2.

Field	Description
DHCP Server Address	If **Relay** is selected in the **DHCP** field above then enter the IP address of the actual remote DHCP server here.
Pool Size	This field specifies the size or count of the IP address pool.
First DNS Server Second DNS Server Third DNS Server	Select **From ISP** if your ISP dynamically assigns DNS server information (and the Business Secure Router's WAN IP address). The field to the right displays the (read-only) DNS server IP address that the ISP assigns. Select **User-Defined** if you have the IP address of a DNS server. Enter the DNS server's IP address in the field to the right. Select **DNS Relay** to have the Business Secure Router act as a DNS proxy. The Business Secure Router's LAN IP address displays in the field to the right (read-only). The Business Secure Router tells the DHCP clients on the LAN that the Business Secure Router itself is the DNS server. When a computer on the LAN sends a DNS query to the Business Secure Router, the Business Secure Router forwards the query to the Business Secure Router's system DNS server (configured in the **SYSTEM General** screen) and relays the response back to the computer. You can only select **DNS Relay** for one of the three servers; Select **None** if you do not want to configure DNS servers. If you do not configure a DNS server, you must know the IP address of a machine in order to access it.
LAN TCP/IP	
IP Address	Type the IP address of your Business Secure Router in dotted decimal notation 192.168.1.1 (factory default).
IP Subnet Mask	The subnet mask specifies the network number portion of an IP address. Your Business Secure Router will automatically calculate the subnet mask based on the IP address that you assign. Unless you are implementing subnetting, use the subnet mask computed by the Business Secure Router 255.255.255.0.
Multicast	Select **IGMP V-1** or **IGMP V-2** or **None**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about interoperability between IGMP version 2 and version 1, please see *sections 4 and 5 of RFC 2236*.
Windows Networking (NetBIOS over TCP/IP	
Allow between LAN & WAN	Select this check box to forward NetBIOS packets from the LAN to the WAN and from the WAN to the LAN. If your firewall is enabled with the default policy set to block WAN to LAN traffic, you also need to create a WAN to LAN firewall rule that forwards NetBIOS traffic. Clear this check box to block all NetBIOS packets going from the LAN to the WAN and from the WAN to the LAN. This field does the same as the **Allow between WAN and LAN** field in the **WAN IP** screen. Enabling one automatically enables the other.
RIP Settings: See BCM50 Router – IP Routing Guide	

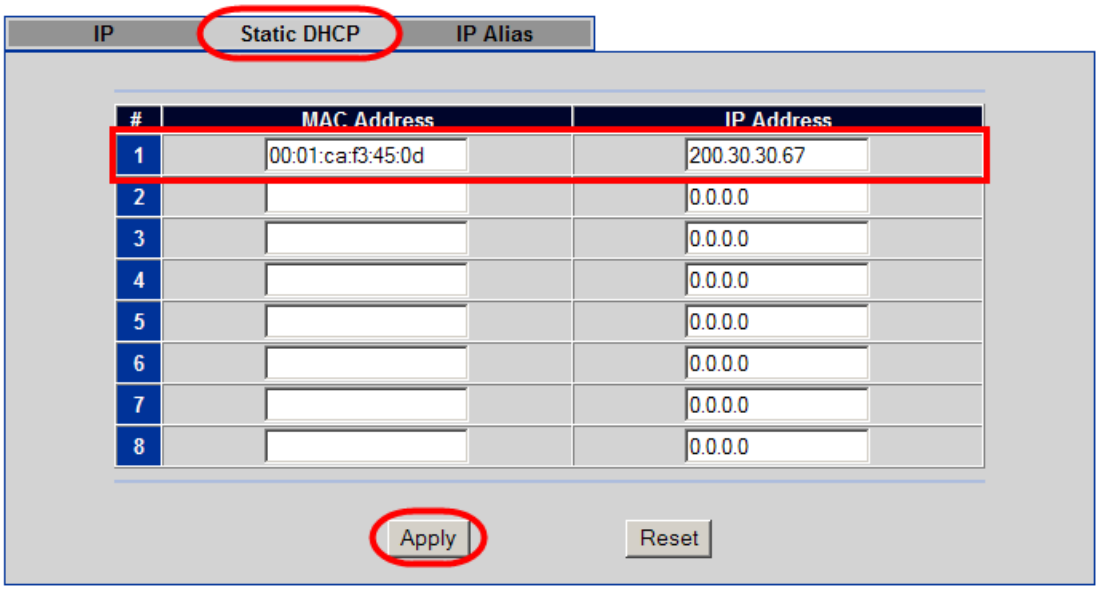
Configuring Static DHCP

If PCs or IP Phones on the network require the same IP address constantly, then the BCM50 Integrated Router can be configured to reserve an IP address for that device.

1. Access the Web Router GUI (refer to the **Accessing the Web Router GUI** section of this guide).

2. From the **Main** menu select **LAN**.

3. In the **Static DHCP** tab, enter the MAC Address of the device, and the IP address to be reserved for it.



Static DHCP Settings

Field	Description
MAC Address	Type the MAC address (with colons) – otherwise known as the physical address – of a computer on your LAN.
IP Address	Type the IP address that you want to assign to the computer on your LAN.

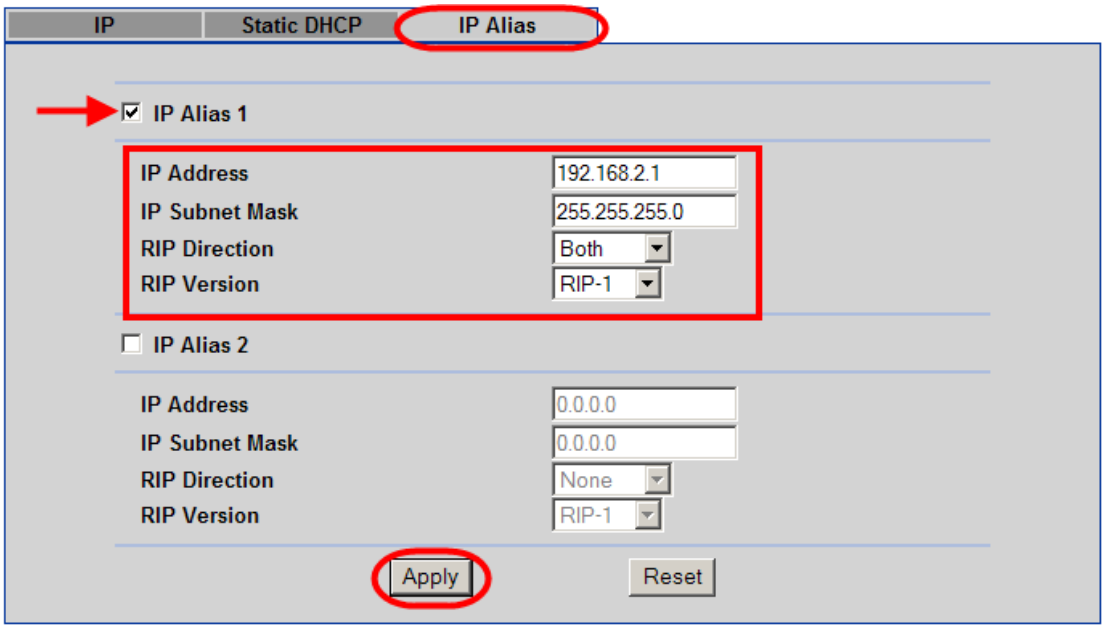
Configuring IP Alias

Use this section to configure the Router Card with up to two more IP Addresses. This will allow the BCM50 Integrated Router to connect to logically separate networks, being the default gateway for each network.

1. Access the Web Router GUI (refer to the **Accessing the Web Router GUI** section of this guide).

2. From the **Main** menu select **LAN**.

3. Click on the **IP Alias** tab. Enter the **IP Address** and **Subnet Mask** and enable the Alias by ticking the checkbox.



IP Alias Settings

Make sure that the subnets of the logical networks do not overlap.

Field	Description
IP Address	Enter the IP Alias address of your BCM50 Integrated Router Card (note that this is not the same as the LAN Core) in dotted decimal notation, for example, 192.168.2.1
Subnet Mask	Your BCM50 Integrated Router will automatically calculate the subnet mask based on the IP address that you assign. Unless you are implementing subnetting, use the subnet mask computed by the BCM50e/be Router.
RIP Settings: See BCM50 Router – IP Routing Guide	

Avaya Documentation Links

- BCM50e/be Integrated Router Configuration – Basics
- BCM50a/ba Integrated Router Configuration – Basics